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EXAMINER	
YAM, STEPHEN K	

ART UNIT	PAPER NUMBER
2878	

DATE MAILED: 06/27/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/847,908	COMEAU, ALAIN R.	
	Examiner	Art Unit	
	Stephen Yam	2878	

-- The MAILING DATE of this communication appears on the cover she t with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *30 December 2002* .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 7 .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

This action is in response to Amendments and remarks filed on December 30, 2002. Claims 1-20 are currently pending.

Claim Objections

1. Claims 1, 9, 11, and 12 are objected to because of the following informalities:

In Claims 1 and 9, line 5, "said wavelengths of light" lacks proper antecedent basis as other references refer to "selected wavelengths of light". Examiner recommends that Applicant use consistent terminology throughout the claims.

In Claims 11 and 12, "one photodiode" lacks proper antecedent basis.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 1-20 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The limitation of the first and second photodiodes converting the same wavelengths of light from the modifications to the claim language in Applicant's amendment was not in the original disclosure, where Applicant taught the first and second photodiodes converting different wavelengths of light (see Pages 6-7, paragraph 0024 of original specification). Therefore, the modified subject matter is new subject matter.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 1-4, 7, 9, 10, 13, and 15-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Shoda US Patent No. 5,747,863.

Regarding Claim 1, Shoda teaches (see Fig. 7 and 8) an apparatus for generating an electronic signal in response to selected wavelengths of light comprising a first photodiode (6) for converting at least the selected wavelengths of light (see Fig. 10) to a corresponding first electronic signal, a second photodiode (22b) for converting said selected wavelengths of light (see Fig. 11) to a corresponding second electronic signal, and a circuit (see Fig. 9 and Col. 13, lines 21-29) for manipulating the first and second electronic signals to generate an output signal in response to the selected wavelengths of light.

Regarding Claim 9, Shoda teaches (see Fig. 7 and 8) an apparatus for generating an electronic signal in response to selected wavelengths of light comprising a first sensor (6) for

converting at least the selected wavelengths of light (see Fig. 10) to a corresponding first electronic signal, a second sensor (7) for converting said wavelengths of light (see Fig. 11) to a corresponding second electronic signal, wherein the first and second sensors are provided with a spectral sensitivity differential (see Fig. 10 and 11 and Col. 13, lines 15-29), and a circuit (see Fig. 9) for manipulating the first and second electronic signals to generate an output signal in response to the selected wavelengths of light.

Regarding Claim 16, Shoda teaches a method for generating an electronic signal corresponding to selected wavelengths of light, said method comprising the steps of converting (6, 7) (see Fig. 7 and 8 and Col. 12, lines 29-42) wavelength ranges of light into first and second electronic signals wherein at least one of the wavelength ranges includes the selected wavelengths (see Fig. 10 and 11), and manipulating (see Col. 13, lines 21-29) the first and second electronic signals to generate an output signal corresponding to the selected wavelengths of light.

Regarding Claim 2, Shoda teaches the first and second photodiodes provided with a spectral sensitivity differential (see Col. 13, lines 15-29).

Regarding Claims 3 and 10, Shoda teaches the first and second photodiodes having dissimilar optical thicknesses (see Col. 14, lines 16-20).

Regarding Claim 4, Shoda teaches at least one photodiode configured for converting visible light to an electronic signal (see Figs. 10-12 and Col. 3, lines 22-29 and Col. 6, lines 30-33).

Regarding Claims 7 and 13, Shoda teaches an arithmetic logic circuit (5) (see Fig. 9 and Col. 4, lines 48-50 and Col. 13, lines 21-25) for manipulating the first and second electronic signals to generate an output signal.

Regarding Claim 15, Shoda teaches at least one sensor comprising a circuit (see Fig. 9) for converting visible light to an electronic signal (see Figs. 10-12 and Col. 3, lines 22-29 and Col. 6, lines 30-33).

Regarding Claim 17, Shoda teaches the converting step further comprising the steps of converting (see Col. 12, lines 55-61) said wavelength ranges of light, including at least the selected wavelengths of light, to a corresponding first electronic signal, and converting (see Col. 12, lines 55-61) said wavelength ranges of light, including at least wavelengths distinct from the selected wavelengths of light (see Figs. 10-12), to a corresponding second electronic signal (see Col. 12, line 62 to Col. 13, line 7).

Regarding Claim 18, Shoda teaches (see Fig. 9) a further step of using a differential (output of (5e) between the first electronic signal and the electronic second signal (see Col. 13, lines 3-7 and 21-29) to generate the output signal.

Regarding Claim 19, Shoda teaches a step of selecting first and second wavelength ranges which partially overlap (see Figs. 10-12).

Regarding Claim 20, Shoda teaches the selected wavelengths comprising visible light (see Figs. 10-12 and Col. 3, lines 22-29 and Col. 6, lines 30-33).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 5, 6, 8, 11, 12, and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shoda in view of Kato et al. US Patent No. 3,617,753.

Regarding Claims 5, 6, 11, and 12, Shoda teach the apparatus in Claims 1 and 9, according to the appropriate paragraph above. Shoda does not teach one photodiode having an optical thickness of about 7.0 micrometers. Kato et al. teach an apparatus for generating an electronic signal in response to selected wavelengths of light comprising (see Fig. 3) a first photodiode (22a) for converting at least the selected wavelengths of light to a corresponding first electronic signal, a second photodiode (22b) for converting wavelengths of light to a corresponding second electronic signal, and a circuit (see Fig. 8) for manipulating the first and second electronic signals to generate an output signal in response to the selected wavelengths of light, wherein one photodiode has an optical thickness of about 7.0 micrometers (see Col. 4, lines 39-41) and one photodiode has an optical thickness of about 3.5 micrometers (see Col. 4, lines 39-41). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the a 3.5 and 7.0 micrometer optical thickness as taught by Kato et al. in the apparatus of Shoda, to provide optimal detection of the apparatus for red, green, and blue light as taught by Kato et al. (see Col. 4, lines 38-41).

Regarding Claims 8 and 14, Shoda teach the apparatus in Claims 1 and 9, according to the appropriate paragraph above. Shoda does not teach the circuit comprising a scaling circuit.

Kato et al. teach an apparatus for generating an electronic signal in response to selected wavelengths of light comprising (see Fig. 3) a first photodiode (22a) for converting at least the selected wavelengths of light to a corresponding first electronic signal, a second photodiode (22b) for converting wavelengths of light to a corresponding second electronic signal, and a circuit (see Fig. 8) for manipulating the first and second electronic signals to generate an output signal in response to the selected wavelengths of light, wherein the circuit comprises a scaling circuit (43). It would have been obvious to one of ordinary skill in the art at the time the invention was made to include a scaling circuit as taught by Kato et al. in the apparatus of Shoda, to weigh the two signals differently for optimal processing.

Response to Arguments

6. Applicant's arguments filed December 30, 2002 have been fully considered but they are not persuasive.

Regarding Applicant's arguments on the Kato reference, Applicant argues that Kato does not address address unwanted responsiveness to other portions of the electromagnetic spectrum by using a differential response. Examiner asserts that the claim language does not recite using a "differential response" from the two signals but rather, merely states generating an output signal by manipulating the first and second electronic signals. In addition, Applicant argues that Kato does not teach the coupling of the first and second diodes to output a selected wavelength or manipulation of electronic signals. Examiner asserts that Kato does indeed teach coupling the diodes as seen in Fig. 8, along with manipulating the electronic signals through the use of the circuitry in Fig. 8.

Regarding Applicants arguments on the Shoda reference, Applicant argues that Shoda does not teach combining visible wavelengths. Examiner asserts that Shoda invention is responsive to visible light, according to Figs. 10-12, Col. 3, lines 22-29, and Col. 6, lines 30-33. In addition, it would have been obvious to combine the two references, as both rely on the principle of using different optical thicknesses to capture different wavelengths of light in a system.

7. Applicant's arguments with respect to claims 1-20 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stephen Yam whose telephone number is (703)306-3441. The examiner can normally be reached on Monday-Friday 8:30am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Porta can be reached on (703)308-4852. The fax phone numbers for the organization where this application or proceeding is assigned are (703)308-7724 for regular communications and (703)308-7724 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-0956.

SY

SY
June 19, 2003

DAVID PORTA
SUPERVISORY PATENT EXAMINER
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